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ABSTRACT

An instructional study examined whether teaching strategies related to planning and reviewing behaviors would affect planning, reviewing, revising, and producing texts. Training texts were examined using a multiple baseline across participants design with multiple probes in baseline. During baseline and in intervention phases, two highly capable 12-year-old sixth-grade students (one boy/one girl) wrote stories on a computer using a word processor. Strategy instruction increased the amount of time writers spent planning, reviewing, and producing text. Results indicated that most stories written after instruction contained more words and all of them contained more sentences and story elements. Frequency (number of words written per minute) during story-writing sessions changed little from baseline to intervention phases for each participant. Findings through social validity evaluations suggest that stories written after instruction were higher in overall writing quality than stories written during baseline. (Contains 18 references; evaluation charts are appended.) (Author/CR)

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ED 406 687

Running head: IMPROVING CHILDREN'S STORY-WRITING

Improving Young Writers' Planning and Reviewing Skills While Story-Writing

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Abstract

This instructional study was conducted to determine whether teaching strategies related to planning and reviewing behaviors would affect planning, reviewing, revising, and producing text. In addition, writing quality and number of story elements included in stories were compared before and after instruction. Training effects were examined using a multiple baseline across participants design with multiple probes in baseline. During baseline and in intervention phases, two highly capable 12-year-old students wrote stories on a computer using a word processor. Strategy instruction increased the amount of time writers spent planning, reviewing, and producing text. Most stories written after instruction contained more words and all of them contained more sentences and story elements. Frequency (number of words written per minute) during story-writing sessions changed little from baseline to intervention phases for each participant. Social validity evaluations indicated that stories written after instruction were higher in overall writing quality than stories written during baseline.

Writing is an exacting and difficult skill to master. It is complex and places multiple demands on writers. Good writers must coordinate topic knowledge, effectively use strategies to plan, write text, review, revise and monitor their progress while they write (Harris & Graham, 1992). Negotiating the rules and mechanics of writing is essential, but only rudimentary to expert writing. Writers must also attend to content organization, form, purpose and goals for writing, audience, genre, and monitoring of their communicative intent and efficacy (Bereiter & Scardamalia, 1982).

Expert writers possess and use a variety of strategies for planning and reviewing (Hayes & Flower, 1980). Planning, which occurs at the sentence level and at the more global rhetorical level, includes idea generation, goal setting and organization of ideas to create a well written product. Good writers plan more and in qualitatively different ways than less-skilled writers. Reviewing includes editing and revising and leads writers to make changes in their texts. Effective revision expands and reorganizes meaning and requires more than just correcting spelling or grammar errors (Fitzgerald, 1987). According to MacArthur, Harris, & Graham (1994) effective use of such strategies during writing can greatly enhance the quality of expert writers' texts. One goal of instructional studies aimed at increasing writing quality has, therefore, been to teach less-skilled writers, who usually focus solely on generating content and meeting simple genre writing task requirements, to write more like experts.

Strategy instruction has become a valuable means of attacking students' academic deficiencies. Its effectiveness, however, has been examined in studies focused primarily on students with learning disabilities and the effects of frequency as a measure of fluency

have rarely been investigated. The purpose of this study was to examine whether teaching planning and reviewing strategies would affect story-writing processes and outcomes in a variety of ways. First, we attempted to determine whether strategy instruction would increase the amount of time gifted participants planned, produced text, reviewed, edited and revised. Second, we examined the effects of strategy instruction on the frequency of words written during story-writing. Third, we compared the number of story elements included in stories written prior to instruction and after instruction. Fourth, and finally, we assessed whether stories written after instruction would be considered higher in overall writing quality than stories written during baseline.

Method

Participants and Setting

Participants were two highly capable 12-year-old, sixth-grade students. Both participants, Liz and Matt, are basic writers and both possess adequate keyboard skills to type comfortably on a word processor. They both attend the same elementary school in Washington state and both are in English honors programs and labeled "gifted."

Liz is a bright, outgoing daughter of a physician and an artist. She earns high grades in school, enjoys theater and dance, and likes to write. However, as with most basic, young writers, Liz often writes quickly, doing very little planning or reviewing when doing school assigned writing projects.

Matt is a gregarious and mature 12-year-old. He is socially popular and very bright. He scores in the 99th percentile on standardized tests and has qualified to take an

out of level national test. Although Matt is bright, he often rushes through his school work and produces written products below his expected potential.

This study was conducted in the first investigator's home office on an IBM computer. This site was quiet and provided a nondisruptive environment for the participants to concentrate, learn, and write. Baseline sessions were conducted twice a week for each child and lasted approximately 1 hour each. Intervention sessions were conducted once or twice per week, depending on the participants' schedules, and each session lasted between 1.5 to 2 hours.

Materials

The planning strategy instruction consisted of the story grammar C-SPACE mnemonic described in MacArthur, Schwartz, and Graham (1991). First, verbal instruction was provided in which students were told to think about their audience and about the type of story they would like to write. Next the C-SPACE mnemonic was introduced as a written prompt and students used it to take notes and outline prior to story-writing. The mnemonic was as follows: "C = Character--List and describe your characters using as many describing words as you can think of. S = Setting--Where does your story take place? One location, several, or many? Describe each location in detail. P = Problem or purpose for story--What is the purpose of your story? What are the problems that your main character and secondary characters encounter in the story? How do they deal with these problems and how do they resolve them? A = Action--What happens? Use as many action words as possible to describe what your characters do in the story. C = Conclusion--How does your story end? What ending do you want to

create to leave your readers wanting to read more of your work? E = Emotion--How do your characters feel? Write sentences that describe and explain your characters' moods."

The reviewing strategy consisted of teaching participants how expert writers reread, review, edit, and revise their texts. Emphasis was placed on making meaning-changes to texts to make them more coherent and clear. Spelling and mechanical fixes were mentioned as editing. Teaching occurred at the beginning of each intervention session and a written reviewing prompt was given to participants at the end of each initial writing session. That prompt included the following: "Go back and reread your story. Do you have a beginning, a middle, and an end to your story? Have you described the setting where your story takes place? Did you make the problem or plot of your story clear? Is the action of your story interesting? Is the plot exciting and well thought out? Does your conclusion resolve the problem in the story? Have you corrected all spelling and punctuation errors? Are you ideas clear? Do all of your sentences read well? Do they make sense? Now, once you have made your changes, go back and reread your story one more time. Can you write and say more?"

Dependent Variables

Planning. Planning was measured as time spent outlining prior to writing and number of words written per outline. Planning time was measured using WriteScope (Butterfield, Locke, & Albertson, 1995) and accuracy of WriteScope was checked by timing writers with a stopwatch. Number of words written per outline was recorded initially by WriteScope and rechecked by transferring all outlines to Word 6 to verify word count accuracy.

Text Production. Text production was measured in four ways. First, the overall amount of time spent writing (not including planning time) was measured using WriteScope and a stopwatch. Second, the number of words written per story was calculated using both WriteScope and Word 6. Third, the number of sentences per story was counted and fourth, the number of words written per minute was recorded.

Reviewing, Editing, & Revising The amount of time writers spent reviewing, editing, and revising after initial story-writing was recorded using a stopwatch and the types of edits and revisions writers made to their texts were observed.

Number of Story Elements. The number of story elements writers included in their stories was counted and stories written prior to instruction were compared to stories written after instruction. Story elements include main character, locale, time, start event, goal, action, ending, and reaction. This scale was developed for assessing the schematic structure of written stories (Stein & Glen, 1979). One point was awarded for each element included in the story; a second point was given if the element was highly unusual or highly developed. For details on scoring story elements see Harris and Graham (1996).

Writing Quality. Writing quality was defined as overall writing quality and good story telling. Subjective evaluations were made by four raters: two writing workshop volunteer teachers, a 6th-grade teacher, and a graduate student researcher. Four stories were randomly selected for each participant, two baseline stories and two after-instruction stories. Each of these stories was paired with each of the participant's other stories and one of the stories was rated as better in overall writing quality. Each selected story was then rated against every other of that participant's stories in the same paired fashion.

Design and Procedures

This study was a multiple baseline across participants design with multiple probes in baseline. Multiple probes were used to lessen the number of baseline sessions required by Matt in order to avoid reactive effects and decrements in performance due to an extended baseline phase (Horner & Baer, 1978).

Baseline. In all baseline session, Liz and Matt were allowed to practice using the word processor. They had the option to practice for 10 minutes at the beginning of each writing session to familiarize themselves with all keys, mouse, and other features of the word processing program. Each participant worked separately and at different session times throughout the study. Each baseline session lasted for approximately 1 hour over several weeks and each participant received identical directions.

For each baseline session, participants were given the following simple written direction on a computer screen: "Write a story that involves (randomly assigned topic). There is no time limit and when you are happy with your story let me know." When told by participants that they were through writing, the investigator asked if there were any changes they'd like to make to their texts. When the participants indicated that they were completely finished, either the participants or the investigator used the mouse to click on the "done" button to end writing sessions.

Liz wrote five baseline stories followed by the instruction intervention. Matt wrote six baseline stories and began the instruction intervention after Liz had completed three intervention sessions.

Instruction Intervention. Instruction included teaching both the planning and reviewing strategies. A handout was used to introduce and discuss the C-SPACE

mnemonic. A separate handout introduced and discussed the reviewing strategy. Written prompts for both strategies were given to participants to use while planning and reviewing. The investigator described both strategies in detail and participants were encouraged to ask questions during instruction. Participants then verbally explained both strategies to show mastery. An instructional session preceded each story-writing session during the intervention phase. Instruction lasted 15 minutes per session.

After Liz and Matt had mastered the strategies and prior to story-writing, they made notes and an outline on the computer using the C-SPACE written prompt. All outlining sessions were conducted separately from story-writing sessions. Hard copies of their notes were printed and given to the writers to use during story-writing. Planning intervention directions were given to participants on a printed sheet and consisted of the following: "You will plan to write a story that involves (topic randomly assigned). Your story needs to have a beginning, middle, and end. Think about who and what you want to write about. Think about your audience and the type of story you will write (humorous, fiction, non-fiction, scary, science fiction, mystery). Before you start writing your story think about the three items above. Use the computer and the C-SPACE mnemonic (included in detail in handout) to guide your outlining and note-taking and make a letter for each part of the mnemonic and fill it in as you plan. Tell me when you are finished planning and writing your outline and click on the 'done' button." As in baseline, if participants did not immediately click on the "done" button, the investigator clicked on it for them.

Immediately following planning, participants were directed to write a story on the computer and told to refer back to their notes and outlines as needed to aid their writing.

When they finished writing they were given the reviewing check list and told to go through it carefully marking off each item as they completed it. When they finished reviewing, editing, and revising, they told the investigator that they were done and the investigator asked them if there was anything that they wanted to change in their texts, and when participants indicated that they were completely finished, the investigator clicked on the "done" button.

Interrater and Procedural Reliability

Procedural reliability (Billingsley, White, & Munson, 1980) was assessed for six baseline and two intervention sessions per participant. A check list for both baseline and intervention sessions was developed and a trained independent observer checked off the procedure list to indicate if procedures were followed. The observer indicated that procedures were followed consistently and in correct order.

Interrater agreement was calculated between the investigator and the trained observer for inclusion of story elements using the formula: (agreements/ [agreements plus disagreements]) times 100%. A total of 18 scores were generated for the 18 stories scored across participants. The independent observer rated 13 randomly selected stories. The investigator and independent observer agreed on 11 scores and disagreed on 2 scores. Interrater agreement was 85%.

Interrater agreement was calculated for writing quality using the same formula and raters agreed on thirty ratings and disagreed on only 2. Interrater agreement was 94%.

All word counts were recorded automatically by WriteScope and then text was transferred into Word 6 to recount number of words for all outlines and stories. All time

measures were recorded by WriteScope and double checked with a stopwatch. Time spent reviewing was recorded by the investigator using a stopwatch and agreement estimates were not obtained for these data.

Results

Planning

Planning data for Liz and Matt are provided in Figure 1. The amount of time writers planned and outlined prior to story-writing increased after instruction. Neither Liz nor Matt planned during baseline; however, during intervention they both planned. Liz took 17 minutes (median) Matt 16 minutes (median) to develop outlines. Across intervention sessions amount of time devoted to outlining decreased slightly. Total number of words written in Liz's outlines increased from a median of 0 in baseline to 304 words during intervention (See Figure 2). The total number of words in Matt's outline increased from a median of 0 to 212 words during intervention.

Text Production

Total number of words written in Liz's stories increased from a median of 496 words in baseline to 740 during intervention (See Figure 3). The total number of words in Matt's stories increased from a median of 595 words in baseline to 965 during intervention. The increases were not due to an increase in the speed with which words were composed; in fact, frequency of typing words decreased slightly See Figure 4). Rather, they were due to an increase in the amount of time writers spent on their stories (See Figure 5). Both writers spent more time on and included more words and more sentences (See Figure 6) in stories written after strategy instruction.

Reviewing, Editing, and Revising

During baseline, it was noted that the median time spent reviewing in the case of both Liz and Matt was 0; in fact, Matt did not review during any baseline session. Time spent reviewing increased for both participants after instruction, with Liz increasing to a median of 12.5 minutes and Matt increasing to a median of 16 minutes (See Figure 7).

We observed that, even though both participants made small editing changes to their texts, they did not make any extensive meaning-changing revisions. This is consistent with other studies investigating types of revisions young writers make in their texts (Fitzgerald, 1987).

Story Elements

The total number of story elements for both writers increased substantially during intervention, with an increase from baseline median of 4 to the intervention median of 9.5 for Liz. Matt obtained similar increases (See Figure 8).

Writing Quality

All four raters judged all of Matt's randomly selected stories written after instruction to be better in writing quality and story telling than his baseline stories. Two of the four raters agreed that all of Liz's stories written after instruction were better than her baseline stories; however, the other two raters agreed that one of Liz's baseline stories was better than one of the stories she wrote after instruction. Raters agreed in thirty instances and disagreed only twice.

Discussion

This study compared the written products of two gifted students prior to and after strategy instruction. The dependent variable measures indicated that both Liz and Matt wrote more, increased their writing time, added more story elements to, and improved the overall writing quality of their stories after instruction. It was also found that they devoted more time to planning and reviewing during the intervention as compared to the baseline phase. The findings are largely consistent with those that have been observed when strategy instruction is applied to students with learning disabilities (e.g., Harris and Graham, 1996). This seems to be particularly important to educators as it indicates that even children who are considered gifted, and who are relatively competent writers initially, can make substantial gains when provided with direct strategy instruction. Writing is a complex and difficult ability to develop, and the data suggest that all writers can improve their skills.

Data in Figures 1-8 also indicate that, where improvements were noted, the data were extremely stable. In other words, increases in performance occurred rapidly once strategy instruction was introduced; thereafter, however, no increases were noted. This may be due to the fact that insufficient practice sessions were provided following intervention to produce additional improvement, or that one should not expect the strategies (at least, as we employed them) to produce accelerations in performance across time in the absence of additional intervention elements.

The frequency measure (number of words written per minute during story-writing) decreased after intervention. It would appear, then, that improvements in

frequency require techniques beyond those involved in interventions derived from current strategy instruction literature.

We noted that the text changes made by Liz and Matt during the reviewing time were minor and did not alter meaning. In essence, they cleaned up their documents, fixed spelling errors, and made grammatical fixes, but they did not make any meaning-changing revisions. Such revisions in texts are often essential for clarity in writing and are typical of prose produced by experts (Fitzgerald, 1987).

The findings suggest that both planning prior to writing and reviewing while writing can improve overall writing quality for above average students. Further, teaching such students to plan and review, to write longer stories, and to include more story elements, was relatively easy to accomplish with the direct instruction approach employed in this investigation. In addition, the use of direct strategy instruction may enable learners to experience rapid improvements in their writing performance. Although these outcomes are promising, a variety of questions and productive areas remain for future investigation. A few potential topics are as follows:

1. It appears that the editing and revising behaviors that occur as writers review their work remains an area of considerable weakness for basic writers (Fitzgerald, 1987; Butterfield, Hacker, & Albertson, 1996). Investigations that focus specifically on those behaviors could substantially enhance our ability to develop and implement effective creative writing programs.

2. In the current investigation, the effects of the planning and reviewing strategies could not be separated. Decoupling the effects of those strategies could be informative and of considerable practical value.

3. One of our participants (Liz) reported that she used the planning and reviewing strategies when writing a story for a young authors' conference 2 months after instruction ended, providing anecdotal evidence of both generalization and maintenance. It would be highly beneficial for future studies to systematically explore practices designed to enhance generalization and maintenance of taught strategies.

4. Although both participants increased their productivity in terms of total words written when strategy instruction was introduced, the frequency with which words were produced decreased in comparison to baseline levels with no trends to suggest the possibility of future acceleration. In other words, if fluency is characterized by a combination of accuracy plus speed (Binder, 1996), both Liz and Matt became less fluent.

We speculate that it is likely that some aspects of the strategies taught (e.g., reviewing) would act rather naturally to reduce fluency as compared to phases in which the students had not received instruction in reviewing and had, in fact, reviewed very little or not at all. Nonetheless, fluency appears to have been a concern of many expert writers (cf. Wallace & Pear, 1977) and considerable benefits have been documented to accrue from fluent performance in terms of retention, endurance and application (Binder, 1996; Lindsley, 1995). Further, few investigators have examined the improvement of children's creative writing fluency (existing examples include Albrecht, [1981], Calkins [1996], and Spaulding, Haertel, Seevers, & Cooper, [1995]). Therefore, future studies focused on techniques that can be combined with effective strategy instruction to promote fluent and creative composition deserve increased attention from writing researchers.

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Figure Captions

Figure 1. Time spent planning and outlining - Liz and Matt

Figure 2. Number of words written during planning/outlining sessions - Liz and Matt

Figure 3. Number of words written during story-writing sessions - Liz and Matt

Figure 4. Number of words written per minute during story-writing - Liz and Matt

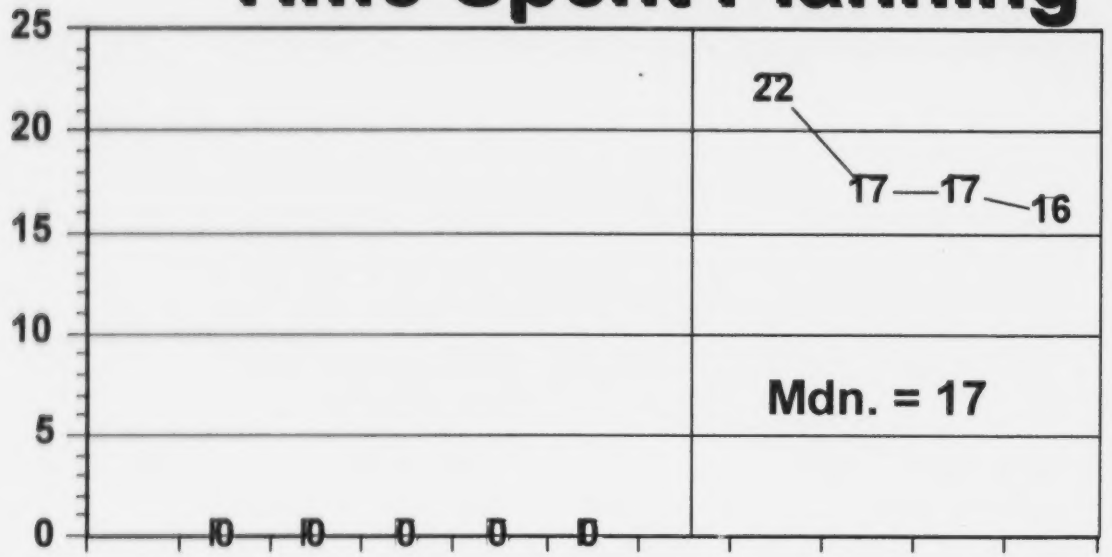
Figure 5. Number of minutes spent story-writing - Liz and Matt

Figure 6. Number of sentences included in stories - Liz and Matt

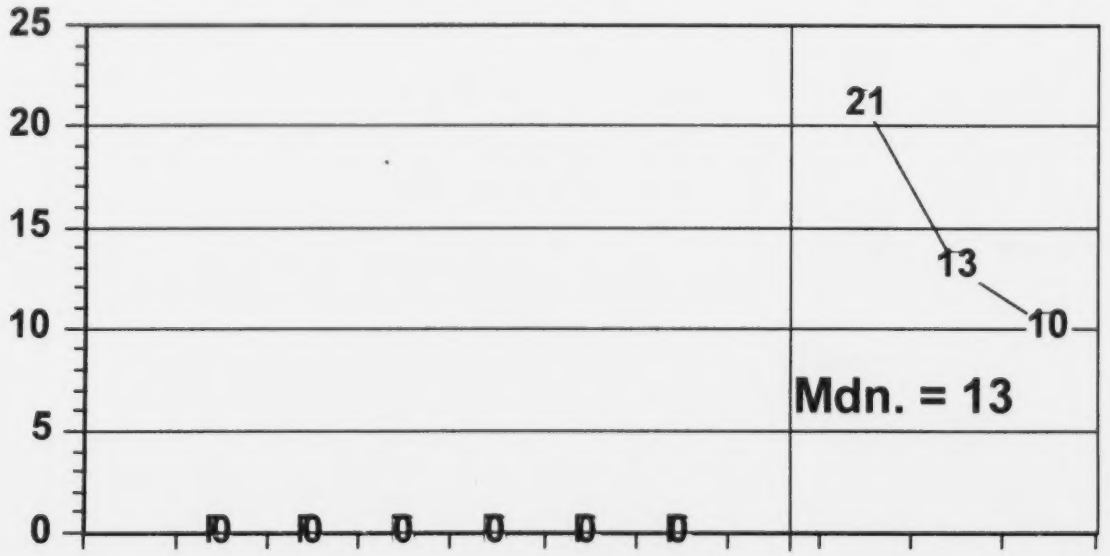
Figure 7. Time spent reviewing, editing, and revising - Liz and Matt

Figure 8. Number of story elements included in stories - Liz and Matt

Time Spent Planning

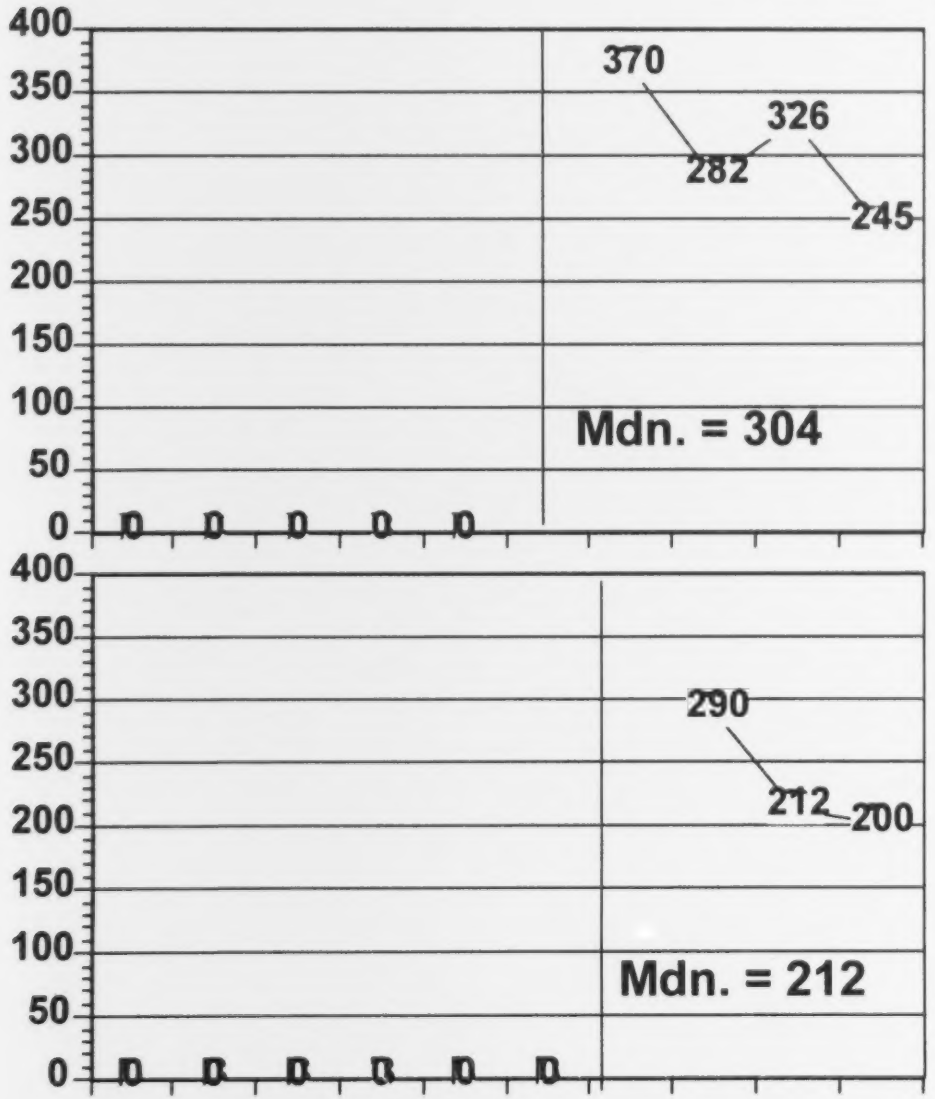


LIZ



MATT

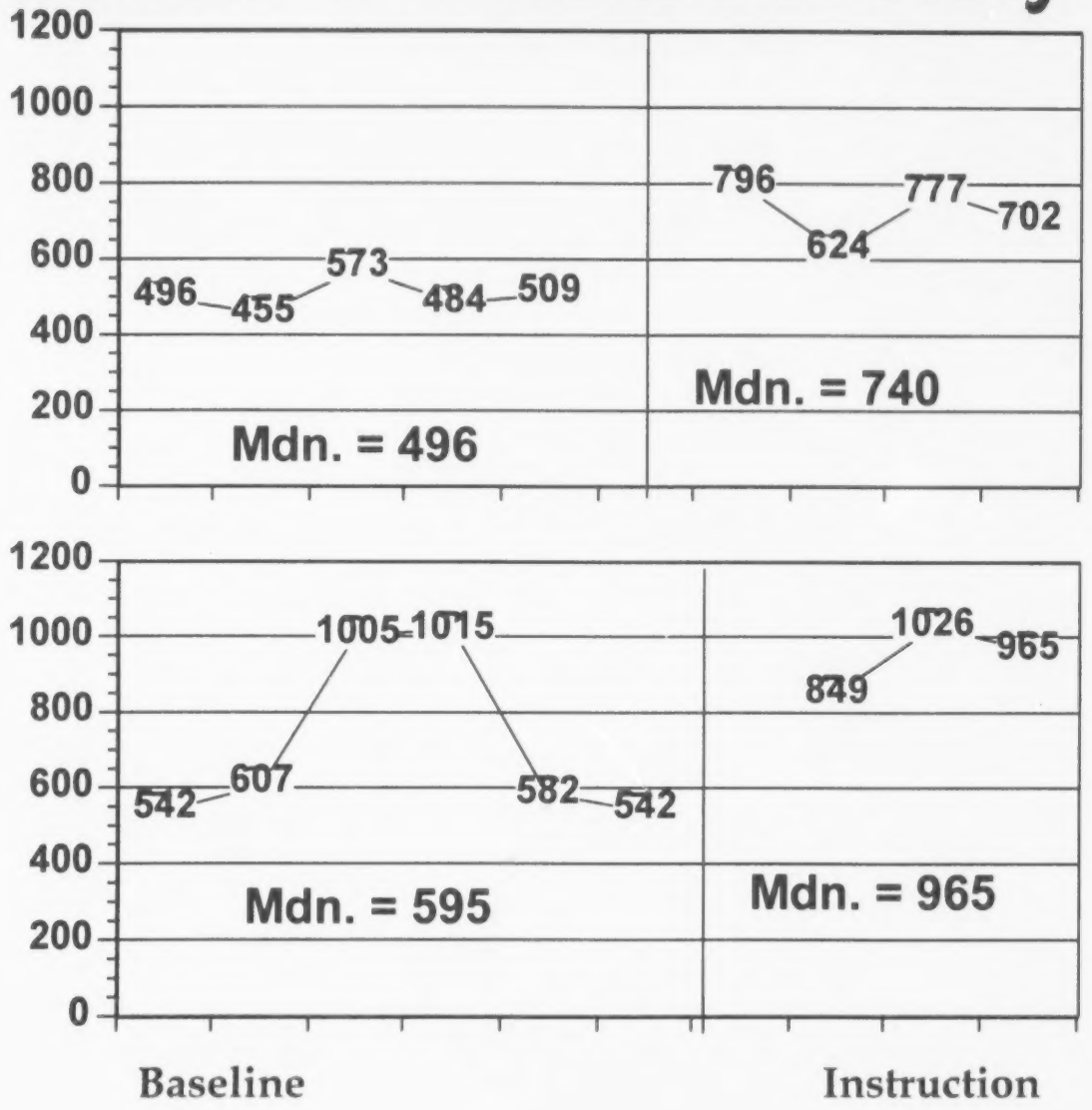
Number of Words per Outline



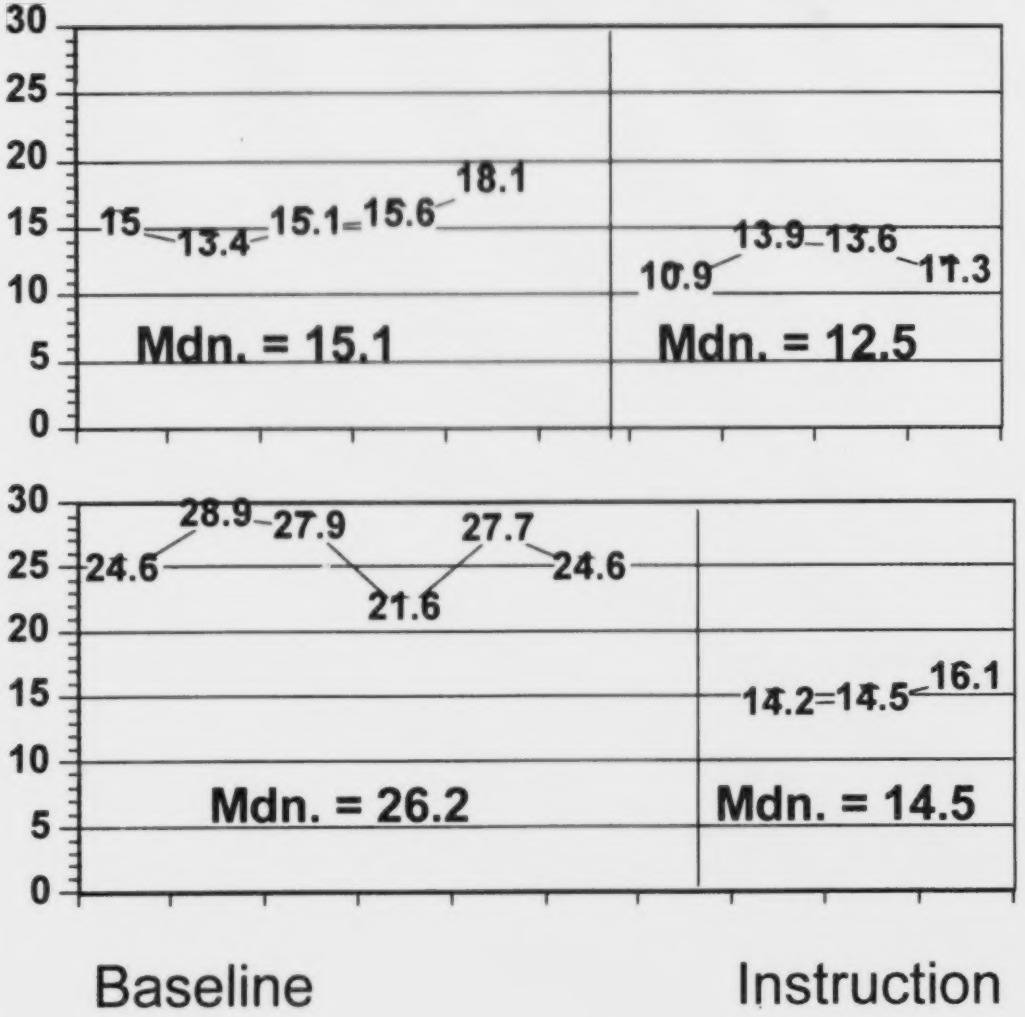
LIZ

MATT

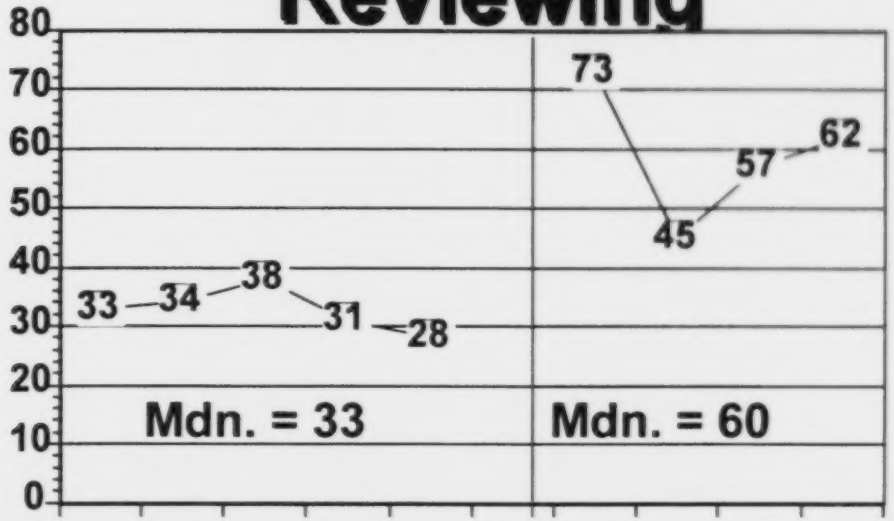
Number of Words Per Story



Rate - Words Per Minute



Minutes Spent Story Writing and Reviewing



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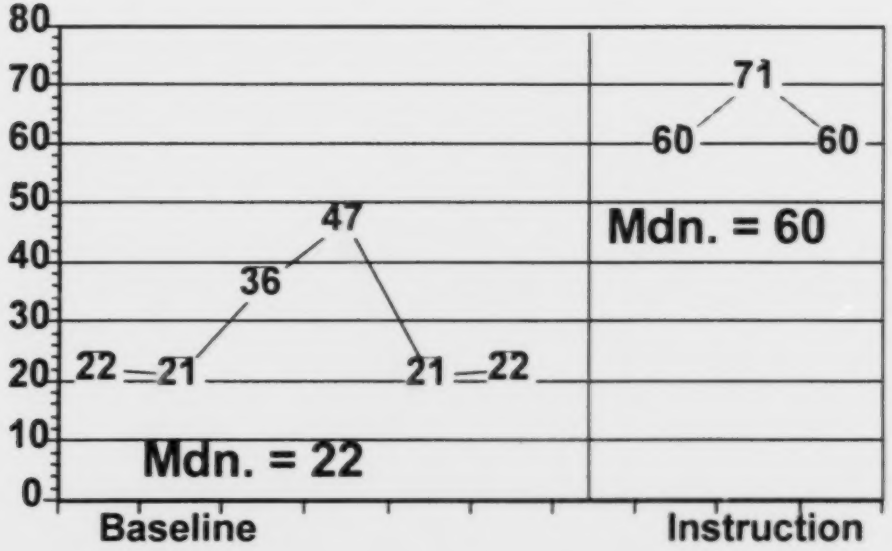

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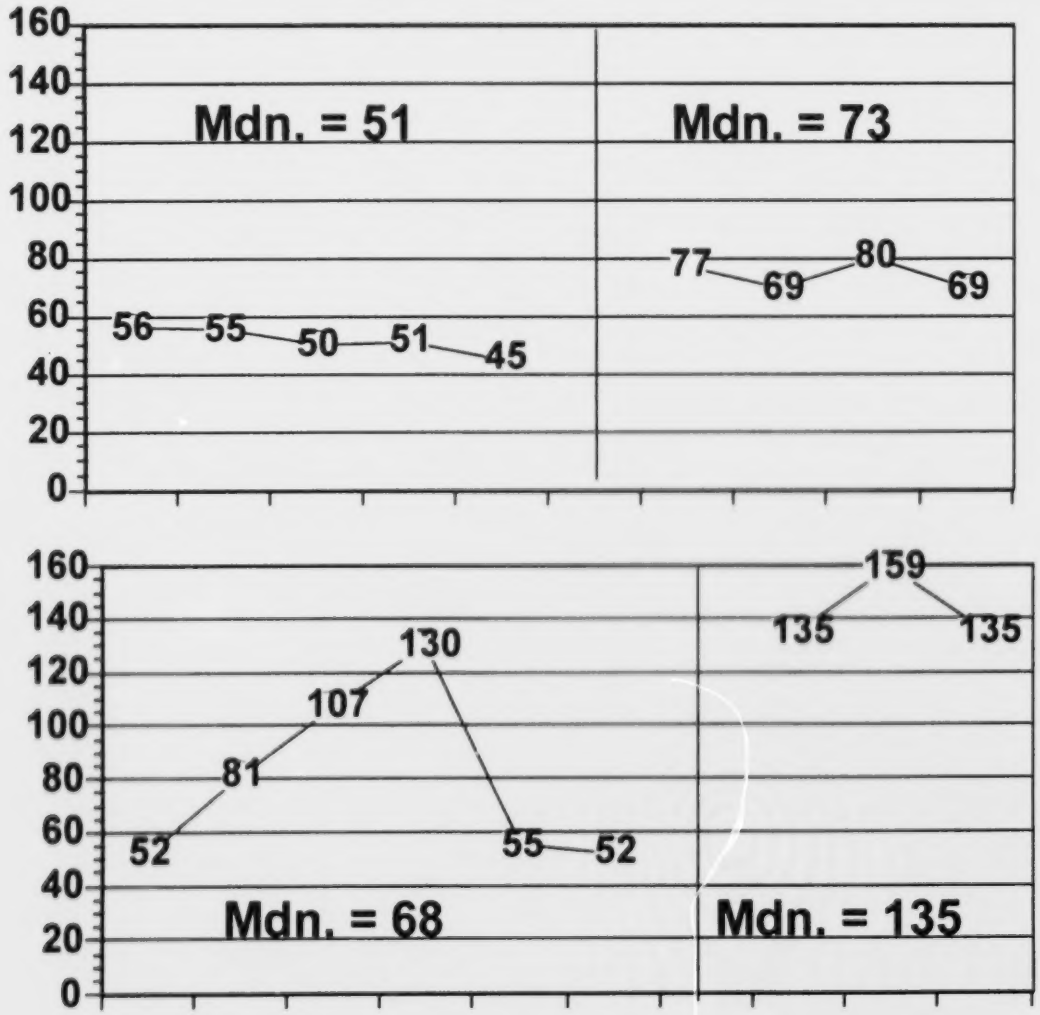
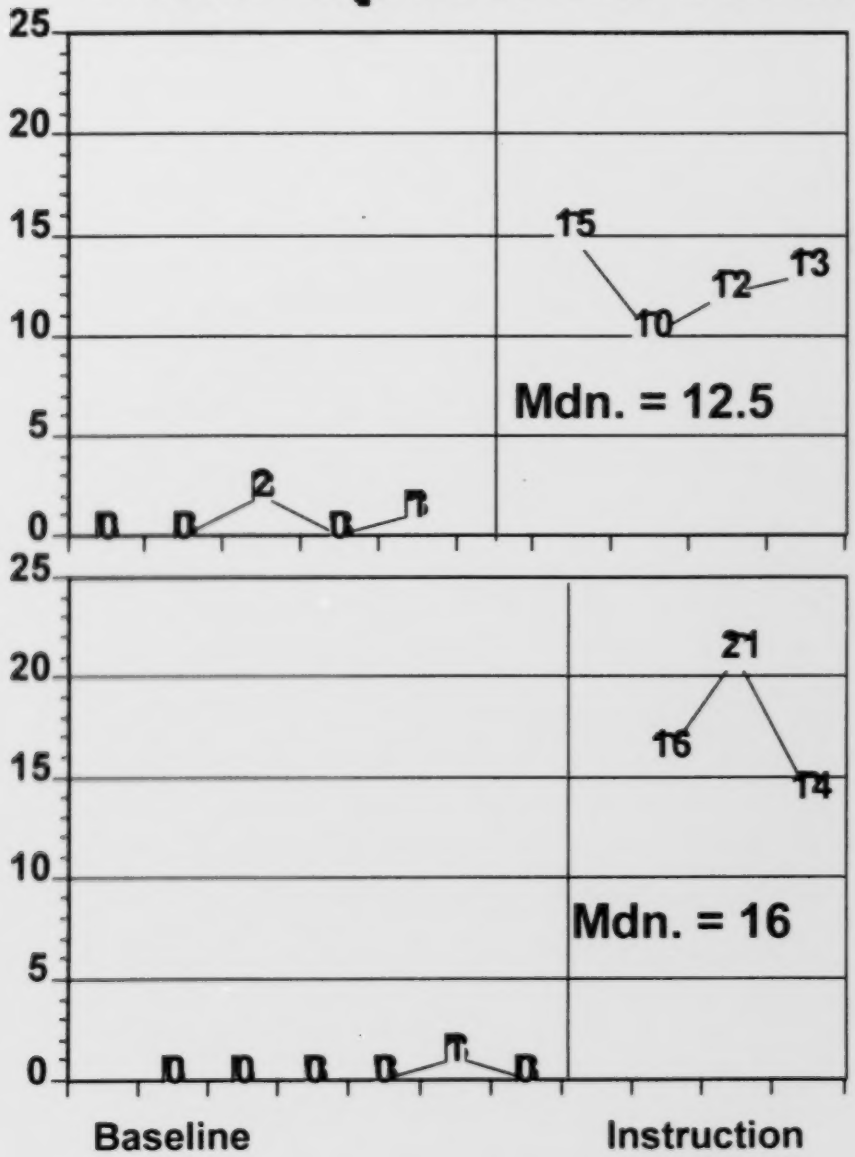
Number Sentences per Story



Time Spent Reviewing



LIZ

Reviewing Time Separated From Total Writing Time

MATT

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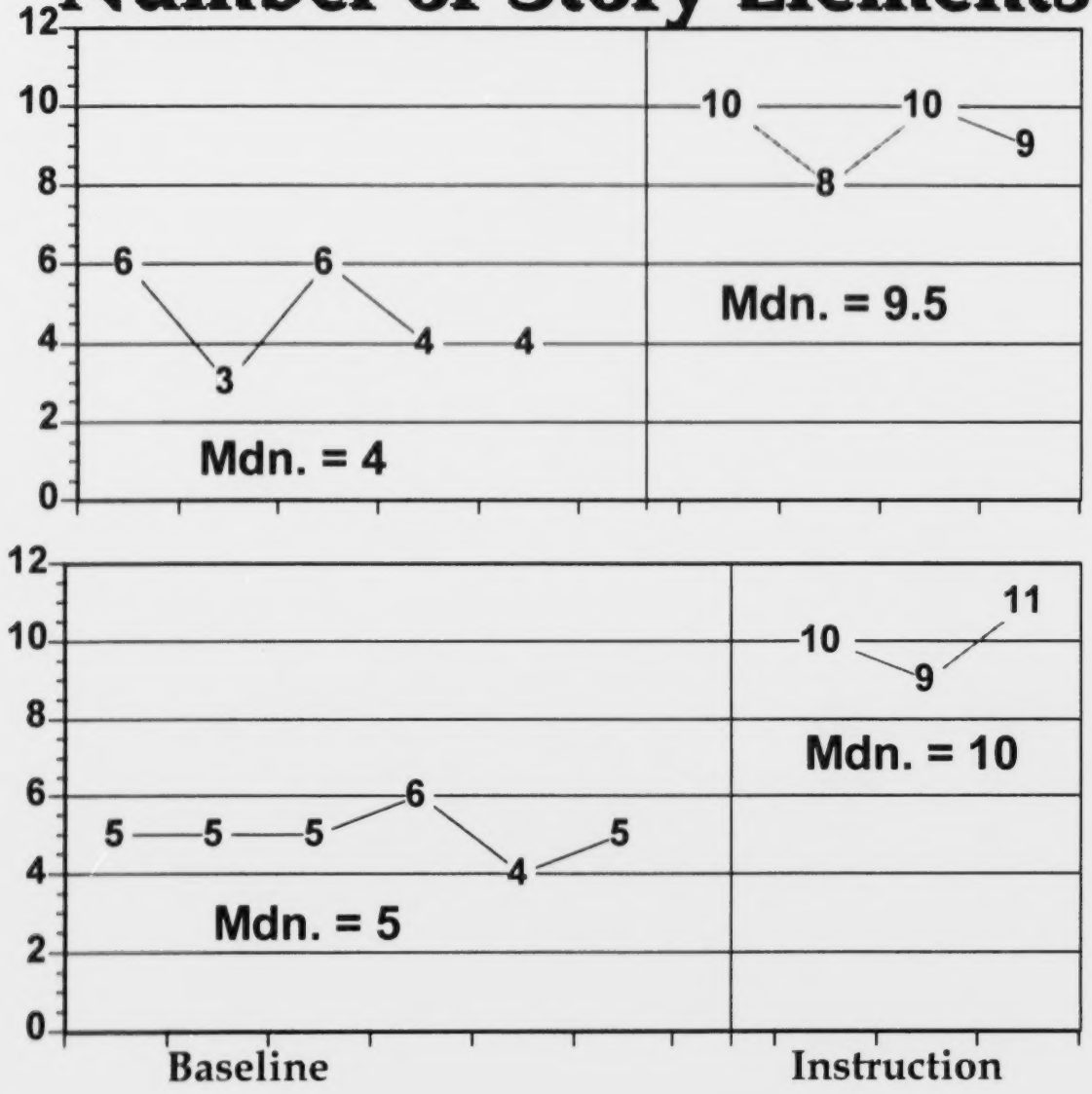
Number of Story Elements



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